

# SCHOOL OF **PROFESSIONAL ENGINEERING**





## SCHOOL OF PROFESSIONAL ENGINEERING

A Professional Engineering course at Runshaw is a fantastic pathway into the world of engineering. Whether it is furthering your knowledge at university or going straight into employment, our engineering courses will take you where you want to go!

Our courses are exciting, technically challenging and wide-ranging, so you are prepared for all the amazing career opportunities that exist within the industry.

Please see our course leaflets at [www.runshaw.ac.uk](http://www.runshaw.ac.uk) and press the **'Apply' button**. For guidance about what careers subjects can lead on to please access [nationalcareers.service.gov.uk](http://nationalcareers.service.gov.uk)



# Staff

The highly successful School of Professional Engineering pride themselves on having a wealth of teaching experience from many different engineering backgrounds. Staff members within the department are incredibly helpful and approachable should students need advice or guidance with their studies or college life.

Students are expected to adhere to the high expectations of Runshaw College and comply with the **Runshaw Respect** and **ABCDE policy** at all times.

Departmental staff within the college will ensure that all students are treated fairly and equally throughout their learning journey. Students' lessons will involve high challenge activities but also supported when required. Our high expectations have been set to ensure that all students perform at the highest level and are industry ready once they finish their learning journey.

Our vision is that all students' progress onto universities, apprentices and full time employment with outstanding qualifications and the correct skills, knowledge and behaviours to become wonderful assets in their chosen field.



# Destinations

In 2021 students on the BTEC Level 3 in Engineering progressed to the following university or higher education courses:



University	Course
<b>Durham University</b>	<i>Accounting</i>
<b>Edge Hill</b>	<i>Computing (Games Programming)</i>
<b>Lancaster University</b>	<i>Mechatronic Engineering</i>
<b>Liverpool John Moores University</b>	<i>Architectural Engineering Architecture Civil Engineering Construction Management Electrical &amp; Electronic Engineering Mechanical Engineering Quantity Surveying</i>
<b>Loughborough University</b>	<i>Aeronautical Engineering with a Foundation Year Construction Engineering Management (with placement year)</i>
<b>Manchester Metropolitan University</b>	<i>Electrical and Electronic Engineering Fashion Marketing Mechanical Engineering Product Design</i>
<b>University of Central Lancashire</b>	<i>Aerospace Engineering Aerospace Engineering with Pilot Studies Architecture Electrical and Electronic Engineering Manufacturing Engineering Mechanical Engineering Motorsports Engineering Robotics Engineering</i>
<b>University of Leeds</b>	<i>Civil Engineering Electronic and Electrical Engineering Interdisciplinary Science with Foundation Year</i>
<b>University of Leicester</b>	<i>Aerospace Engineering with a Year in Industry General Engineering</i>
<b>University of Liverpool</b>	<i>Architecture</i>
<b>University of Salford</b>	<i>Aeronautical Engineering Architectural Engineering Mechanical Engineering Software Engineering with Foundation Year</i>
<b>University of South Wales</b>	<i>Aircraft Engineering and Maintenance Systems</i>
<b>University of Strathclyde</b>	<i>Electronic and Electrical Engineering</i>
<b>Apprenticeships</b>	<i>Degree Apprenticeship in Aerospace Engineering at BAE systems Design Degree Apprenticeship specialising in Civil and Structural Engineering at Sellafield Degree Apprenticeship at Siemens RAF - General Technician (Mechanical) Qualified</i>



**Jamie Russell**








Cambridge university student Jamie Russell who previously attended Runshaw College, created an electric lunar space vehicle during his engineering academy. Jamie is continuing his passion designing and making space rockets as part of his second year Engineering Degree.

# Employer Partnerships

Teachers develop their industrial experiences through many opportunities including training events and national network forums. Community engagement and our work with our employer business partnerships we are able to work collaboratively with national energy companies including Cadent Gas, providing a talent of highly skilled employees. As alumni of the college these students share their experiences with the next generation of talented young engineers which include employer talks, and attending showcase events held at the college.

Through our employer partnership relations each year we are able to ensure over 200 young people access meaningful work placement for up to 45 days. This has provided local and national businesses with the opportunity to access the talent and skills of the future. Many of these learners are subsequently offered full time employment from this experience.



-  Runshaw Advantage
-  STEM accreditation
-  3D print HUB
-  Revit and Architecture academies
-  Affiliations to chartered institutes

# A Level **Engineering**



#Future

Automotive Engineer

Architect

Civil Engineer

Mechanical Design  
Engineer

Product Manager

System Analyst

Our Engineering A Level is delivered by experienced, specialist teachers, in well-equipped design suites.

Project Management is delivered as an integral part of the course and we have a wide variety of specialist provisions that help to support and excellent learning environment of study. There are always opportunities to gain support from experienced engineering teachers within your course of study.

Enrichment activities in Engineering include visits to local universities and industrial sites relevant to the course. You will also have the opportunity to participate in a range of enrichment activities and subject specific trips, such as our previous trips to Kennedy Space Centre. Several of our Engineering students have also taken part in our Architecture and Advanced Manufacturing Academies.

By studying Engineering at Runshaw there is real potential for progression onto a wide range of university degrees or careers, including Architecture and most engineering disciplines. You will also develop analytical, numerical and problem-solving skills that are valuable in a wide range of occupations and activities.

## What will I study?

You will study topics which reflect modern developments in, and applications of, Engineering. Apply your knowledge, understanding and skills of designing and manufacturing prototypes and products to given situations and problems whilst demonstrating your higher thinking skills to solve problems and evaluate the suitability of a design solution.

- computer aided design
- 3D prototyping
- electronics
- mechanics
- higher mathematical analysis
- material science
- project manufacturing and management

## Entry Requirements

A minimum GCSE grade 6 Maths and 4x GCSEs at grade 5. Ideally students will also be studying A Level Maths and 3D Design.

Architecture  
**academy**

Fantastic  
**facilities**

Outstanding  
**support**

# L2 & L3 BTEC Applied Professionals in **Engineering**

## What will I learn?

The Applied Professional Engineering courses incorporate exciting opportunities for students to develop their understanding and learning of engineering, in preparation for progression into engineering industry traineeships.

The BTEC programme allows for one or two years of full time study, which gives learners the opportunity to develop key underpinning skills and knowledge, in fundamental subject area, such as; Engineering Design, Engineering Mathematics and Computer Aided Design, all taught by industry expert Lecturers.

In addition to engineering you will also study Maths and English GCSE's in order to maximise your progression opportunities.

An innovative and exciting addition to the Applied Professional study programme is the introduction of a structured work placement package. This will include students participating in real work experience in engineering industry and this will be facilitated by a structured calendar on a day release basis.

## How will I be assessed?

Assessment of student work will include project and assignment written and practical work, with the addition of external examinations.

## What enrichment can I look forward to?

Trips and visits are a key part of the course and you will have the chance to take part in visits to industry, fundraising activities and five-a-side football competitions.

## What progression is there?

Successful completion of the one-year transition year, will allow learners the opportunity to progress onto further study on the Professional Applied programme. This incorporates an advanced level of study, once again covering a broad depth of engineering subjects.

## Entry Requirements

L3 BTEC - Maths and Science grade 4, English at grade 3 plus two more GCSEs at grade 4 (5 x GCSEs at 4 in total).

L2 BTEC - Maths and Science grade 3, English at grade 2 plus two more GCSEs at grade 3 (4 x GCSEs at 3 in total).

#Future

Aerospace Engineer

Armed Forces

Engineer

Manufacturer

Mechanical Engineer

Structural Engineer

Theoretical  
and practical  
learning

Guest  
speakers

Volunteering  
and fundraising  
opportunities

# T Level Design **Engineering**



#Future

Automotive Engineer

CAD Technician

Civil Engineer

Maintenance Engineer

Mechanical Engineer

Nuclear Engineer

Outstanding facilities

Great progression

Specialist 45 day Industry Placement

## What will I learn?

Inspired & Supported by a range of Industrial partners this unique course will develop your understanding of Engineering and will push and challenge your ideas and thought processes within Design.

Within your first year of study you will explore a range of topics including principles of design, design processes and customer & client requirements. We will research the Past, Present & Future of Engineering to further our understanding and will gain a deeper understanding of the Maths & Science behind Design within Manufacture.

You will have the opportunity to study within the School of Professional Engineering where you will develop your skills and knowledge to a higher level, ready for your future progression into employment or higher study. You will also work for 45 days (315 hours) within the two years on an Industry Placement to further your knowledge and skills.

## How will I be assessed?

There will be a considerable amount of written and calculated work or investigation.

The course is holistic which means that you will get a much better grasp of all of the content as it interweaves

design, safety and applied mathematics into each project.

The course encompasses two exams which cover all of the core content leading into an employer set project which supports all of the learning which has taken place.

## What enrichment can I look forward to?

Students have previously enjoyed guest speakers from National & International Engineering such as Cadent Gas and Robertson and a range of local Engineering companies. There are annual residential trips to places such as London and Design your Future showcases, plus other events such as sports days and half termly fun days, team building as well as other events throughout the year.

## What progression is there?

Students progress onto Apprenticeships with a range of companies and training providers as well as on to University to study a wide range of courses including Engineering, Architecture, Automotive and Mechanical Engineering to name a few. Working alongside exciting Professional industries opens the door to so many opportunities.



# T Level **Civil Engineering**

## What will I learn?

T Levels are a fresh and exciting alternative to A levels as they offer a work focussed experience which combines academic study of the highest quality with practical industry related skills. In addition to this, T Levels include a mandatory 45-industry placement that has been built into the course to further develop individual skills. If you wish to work in the construction sector with a focus on Civil Engineering, then this T Level is for you.

This course is best suited to students who prefer a practical approach to learning yet want a largely classroom-based course. The T Level is equivalent to 3 A Levels and focuses on vocational skills that can help you obtain skilled employment, university study or an apprenticeship.

## How will I be assessed?

Students will be assessed through observations, written assignments, and employer set project (1st year) and exams and an occupational specialist project (2nd year).

## T Level Entry Requirements

A minimum grade 5 in Maths and Science, English at grade 4 and two other GCSEs at grade 4.

The T Level certificate will include:

- an overall grade for the T Level, shown as pass, merit, distinction or distinction\*
- a separate grade for the core component, using A\* to E
- a separate grade for the occupational specialism (Civil Engineering), shown as pass, merit or distinction

## What progression is there?

This course is suitable for anyone wanting a career in civil engineering. Students can progress onto roles such as civil engineering technician, CAD technician, consulting civil engineer and design engineering, or progression into university. Students studying engineering based subjects at Runshaw College have progressed onto university to study a wide range of courses, including Engineering, Robotics and Architecture to name a few, or into careers with a variety of companies, including Rolls Royce, BAE Systems and Cadent Gas.

#Future

Architectural Technician

Building Services

Civil Design

Civil Engineer

Project Manager

Quantity Surveyor

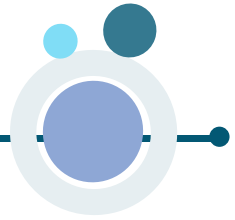
Outstanding  
**Teaching**  
and  
**Learning**

Revit  
**Academy**

Specialist 45  
days Industry  
Placement

**T-LEVELS**  
THE NEXT LEVEL QUALIFICATION

# Enrichment



Within Engineering we run Academies...

## Architecture Academy

Our Architecture Academy encompasses a range of extra-curricular activities for prospective university undergraduates across all of the associated areas within engineering design. The Academy comprises of a range of visual representation, photography and practical manufacture using a range of architectural techniques and processes within our specialist MA3DE design centre. The applied nature of the academy will provide our students with outstanding opportunities to achieve places to study on these prestigious courses within higher education. As a member of these societies, students will be provided with an up to date curriculum created by our experienced staff, alongside regular feedback from university lecturers, ensuring the highest standard of experience. This has included guest lecturers from a broad range of areas and the opportunity to take part in residential trips to key architectural design shows and national museums, as well as more local events such as visits to Manchester Liverpool & London.



## Revit Academy

Begin your exciting journey of Revit Academy and get first hand theoretical and practical experience of industry standard architectural and engineering software. This academy will give you the chance to embark on a creative journey in civil/architectural technology and allow students

to explore architectural design through simple modular housing schemes, small offices designs and school design. Students will learn to understand the material make up of a building and the fundamentals behind regulations and standards. This knowledge will then feed into students' design work of plans, sections, elevations, details, walkthroughs and final renders for a potential client that will be displayed in professional architectural portfolios (ready to take to potential future interviews). Furthermore, students will gain exciting experiences in drone technology, drone missions and flight control in order to conduct building and ground surveys. As well as our fantastic Academies we run, throughout the year we also take part in trips to visit interesting places to keep learning alive. We also bring in Guest speakers and take part in Employability weeks. There are lots of opportunities to take part in sports days and fun days whilst studying Engineering at Runshaw College too.



# Support

**Engineering  
Academies**

*Proud to Partner*

**CUTTING  
EDGE**  
SHARP INNOVATIVE RELIABLE

## What support is available?

The college prides itself on its outstanding support provisions, college wide and within the School of Professional Engineering.

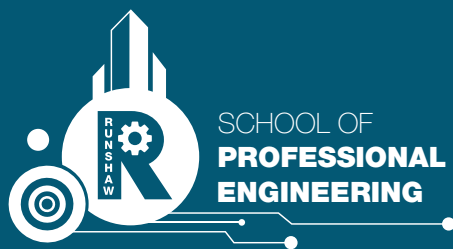
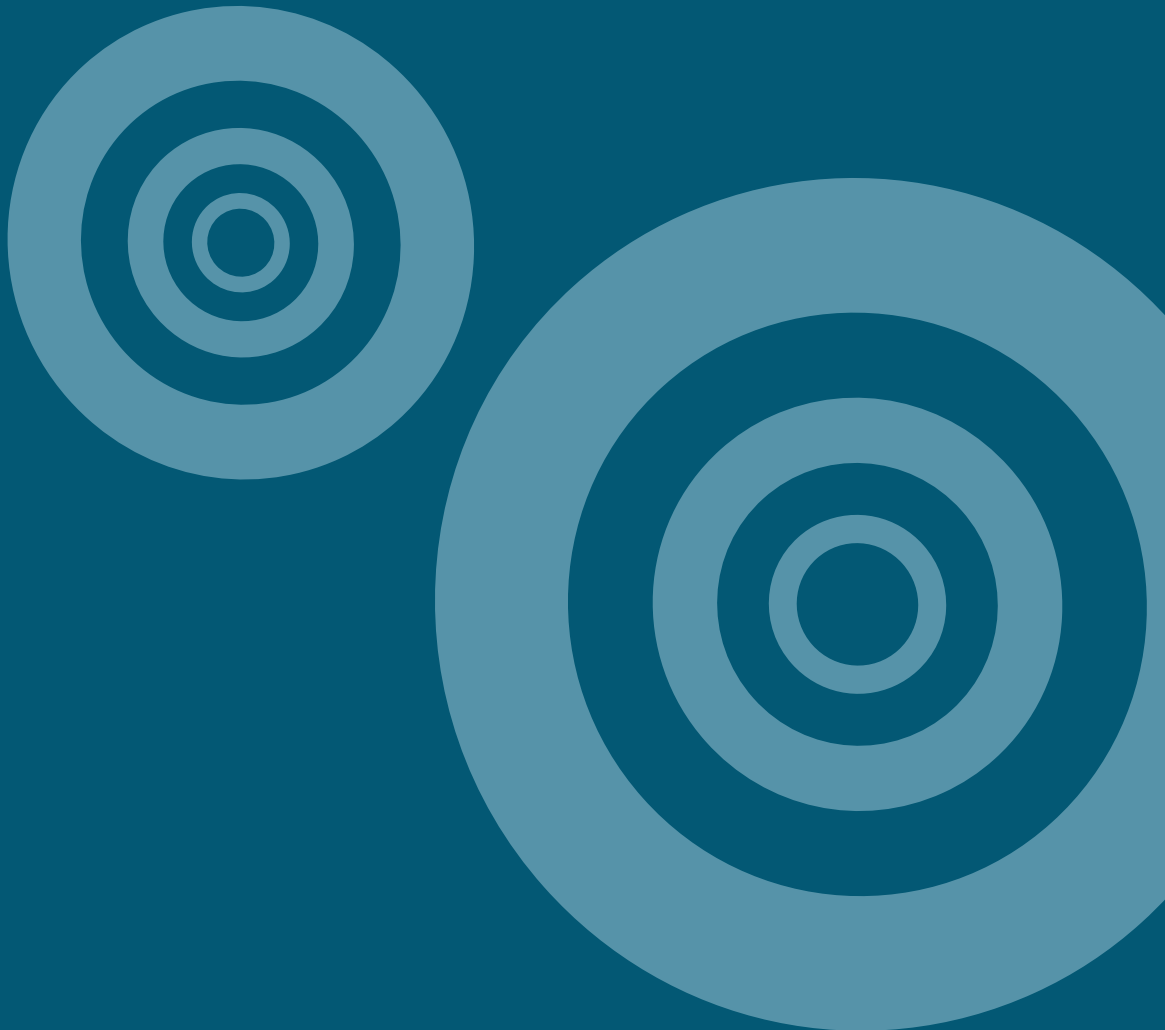
Some of these are:

- 1 to 1 tuition and guidance.
- Teacher lead feedback and target setting.
- Small group support sessions.
- Supervised study.
- Pastoral Mentor weekly sessions and 1 to 1's.
- Extensive resources and extension activities.
- Teachers with industrial expertise in your subject area.

## How can I access this support?

All support can be arranged/accessed through your subject tutor and your Pastoral Mentor. You can also pop down and see our expert support team down in study support to book in for a variety of different support activities. All your subject learning resources and extension activities will be available to access through Teams and our Moodle VLE.





SCHOOL OF  
**PROFESSIONAL  
ENGINEERING**